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DYKEMA GOSSETT PLLC
FRANKLIN SQUARE, THIRD FLOOR WEST
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER	
PICH, PONNOREAY	

ART UNIT	PAPER NUMBER
2135	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,486	YU, KUN	
	Examiner	Art Unit	
	Ponnoreay Pich	2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-35 are pending.

Priority

The examiner recognizes applicant's right to an earlier effective filing date of 6/2/1999.

Drawings

The drawings are objected to because several of the labels in the drawings have misspelled words. For example, see item 605 in Figure 1 and item 585 in Figure 2. These are just two examples of the numerous spelling errors found in Figures 1-10. Applicant is requested to review all the figures and make corrections as necessary.

Specification

The abstract of the disclosure is objected to because two abstracts were submitted on the same day with different contents. It is unclear which abstract applicant meant to be the final version. The one which is the front sheet of a PCT publication appears to contain an error in the second sentence, i.e. "... granting to or refusing the user access to certain information network requesting to access according to the result of the decision." The quoted portion doesn't make sense and is assumed to be an error in translation. The other abstract contains numerous spelling errors and an error in spacing which should be corrected, i.e. see line 4, the word "user's" has extra spaces between the apostrophe and the "s". Correction is required. See MPEP § 608.01(b).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification. There are several places in the specification which are difficult to follow due to what the examiner assumes are translation, grammar, and/or spelling errors. There are also several terms used in the specification which are not common terms in the art of networking which applicant did not define. The examiner assumes that at least some of those terms are the result of a bad translation, i.e. a storey concentrator for instance is disclosed in the specification and shown in Figure 4, but from the figure, it appears that a storey concentrator might be a switch or router rather a device specific only to applicant's invention.

Claim Objections

Claims 1-35 is objected to because of the following informalities:

1. In the preamble of all the claims, the examiner assumes applicant meant to recite "by a user" instead of just "by user".
2. As per claims 4 and 33, the examiner believes that "is one, two, or all of..." should be replaced with "is at least one of", see lines 2-3 of each claims respectively.
3. In claim 11, the examiner assumes "cmnected" should be "connected"; see third to last line.
4. In claim 12, "in formation" should be "information", see line 1.
5. As per claim 21, in line 3, "form" should be "from".
6. In claims 23 and 24, there are extra spaces in the word "user's" which should be removed, i.e. see third limitation of claim 24 and limitations a and c of claim 24.

7. Claim 26 recites "the user is of the right to use the secure network". The examiner assumes claim 26 should instead recite "the user has the right to use the secure network".
8. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. As per claim 1, it is unclear what is characterized (see line 2), the system or user terminal.
2. Claims 1-21 and 23-35 use the terms "network selectors" and "secure exchange" which are not common terms in the art of networking as they appear to be used in the claims. The examiner notes that a secure exchange is often used to describe a type of e-mail server, but this does not appear to be the case for the current application. Judging from what is shown in Fig 2, it appears that a secure exchange might be a commercial switch or router. It is unclear if applicant meant to use these terms or if they are the result of a bad translation from the original document. It is also unclear to what type of devices these terms refer. The examiner notes that there are figures shown in the drawings to which these terms

refer, but it is unclear if what is shown in the drawings encompass all embodiments of devices which can be described by the terms. The specification did not explicitly define these terms.

3. In claim 1, the limitation of "accepts or rejects to access the particular information network requested by the user based on the result of the determination" doesn't make sense. It is unclear what is accepted or rejected by the secure exchange. It is also unclear if applicant meant for the secure exchange to access the particular information network or if perhaps applicant meant to state that the secure exchange grants access to the particular information network.
4. Claims 2-3, 6, and 27-29 recite a "premise concentrator". This is not a common term in the art of networking and was not defined in the specification. It is unclear what a premise concentrator is. Judging from what is shown in Fig 5, it appears that a premise concentrator may be a modem, switch, router, or bridge.
5. As per claims 3, 7, 28, and 29, a "storey concentrator" is recited. This is not a common term in the art of networking and was not defined in the specification. It is unclear what a storey concentrator is. Judging from what is shown in Figure 4, it appears that a storey concentrator might be a switch, router, bridge, or repeater.
6. Claim 7 recites "the variations of voltage" in the last line, which lacks antecedent basis.
7. As per claim 7, it is unclear if the information networks have the variations of voltage or if applicant meant the variations in voltage cause the switch among the

information networks. However, note that all networks must have variations in voltage to function and that information being transferred (which causes things to happen in a network) are also variations in voltage, i.e. digital information are basically 1's and 0's; voltage or no voltage.

8. Claim 9 recites "said connecting lines" which lacks antecedent basis.
9. As per claim 10, it is unclear what is connected to each of the information networks via the wide area network interface, the authentication server or the secure exchange.
10. Claim 12 recites "the management identity of system manager" which lacks antecedent basis.
11. As per claim 12, the limitation of "the secure exchange generates user identification cards based on the user information set on the secure exchange by the system manger" does not make sense. First it is unclear if "by" refers to a relational or spatial relationship. Second, it is unclear what a management identity of system manager is. Third, it is unclear if perhaps the claim was meant to have been directed towards an administrator, i.e. system manager, who authenticates himself/herself to the secure exchange via an identification card and the administrator enters user information from which identification cards for the users are generated by the secure exchange. The examiner notes the limitation recited in claim 12 seems to be disclosed in the specification on page 6, lines 16-20; however, the paragraph in the specification is also unclear and seems to be the result of a poor translation.

12. As per claim 16, it is unclear what is referred to as "having the right to use an information network", the user of the computer or the computer with disk.
13. Claim 17 recites "the local read only optical disk" on line 4, which lacks antecedent basis.
14. Claim 21 recites, "when the user changes the selection of an information network form the network selector to which the computer is connected", which seems to be a mistake, as it does not make sense.
15. As per claim 22, it is unclear what is characterized, the user terminal or system.
16. Claim 22 recites a "network selector". This is not a common term in the art and applicant's specification did not explicitly define the term. It is unclear if the network selector shown in Figure 1 is the total of what applicant considers a network selector.
17. As per claim 24, lines 5-6 recites "the right to use the security level of a secure network". It is unclear how a user would have the right to use a security level. Perhaps applicant meant to recite something more along the lines of what sort of rights a user has at a particular security level.
18. As per claim 25, it is unclear to which information network "this information network" refers. See last two lines.
19. As per claim 25, limitation i does not make sense because if the terminal is not provided with memory for storing information, it cannot possibly function. There must be some form of memory to store information at least temporarily to be able

to have I/O with a network device, i.e. at the very least video memory so that information can be displayed to the screen.

20. Any claims not specifically addressed are rejected by virtue of dependency.

21. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12, 15-21, 23-30, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (WO 98/47310) in view of Bouthillier et al (US 5,894,552) and further in view of Liang (US 5,537,099).

Claim 1:

Liu discloses at least two information networks and a user terminal (Fig 1). Liu also discloses a secure exchange (Fig 1).

Liu does not specifically disclose:

1. Network selectors, with one end thereof connected to the user terminal for receiving and transferring user parameters and requests for connecting to a particular information network, and for controlling the user terminal.
2. A secure exchange, **connected to the other end of each of the network selectors, the network side ports of the secure exchange are physically**

isolated from each other, the terminal side ports of the secure exchange are also physically isolated from each other; the secure exchange determines the legality of the user parameters and requests from the network selectors, and accepts or rejects to access the particular information network requested by the user based on the result of the determination.

However, Bouthillier discloses network selectors, with one end thereof connected to the user terminal for receiving and transferring user parameters and requests for connecting to a particular information network, and for controlling the user terminal (Fig 1 and col 1, line 51-col 2, line 12).

At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to incorporate Bouthillier's teachings into Liu's invention. One of ordinary skill would have been motivated to do so because Bouthillier discloses that it would allow for a simple yet highly effective secured network system which would allow only an authorized user of the secure network system to access classified data (col 1, lines 47-51). Note Liu discloses two remote LAN's in Fig 1, i.e. items 42 and 44. Liu also discloses a residence 21 and a business location 22 which contains terminals, all of which could theoretically access network servers in the remote LAN's if there were no security present to prevent unauthorized access. It is common in the art of networking to be concerned with security. For example, business location 22 would probably not want users at residence location 21 to be able to access any sensitive data it might

have stored (i.e. as backup) in remote locations 42 or 44. The network selectors disclosed by Bouthillier would allow for a simple and effective way to control access to servers containing such information.

Bouthillier also does not specifically disclose the second limitation recited above not met by Liu. However, Liang discloses a secure exchange, the network side ports of the secure exchange are physically isolated from each other, the terminal side ports of the secure exchange are physically isolated from each other; the secure exchange determines the legality of the user parameters and requests from the network selectors, and accepts or rejects to access the particular information network requested by the user based on the result of the determination (Fig 2 and col 7, lines 1-23).

In light of the above, at the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to incorporate Liang's teachings into the combination invention of Liu and Bouthillier according to the limitations recited in claim 1, i.e. replace ATM switch 26 seen in Fig 1 of Liu with a concentrator disclosed by Liang. One of ordinary skill would have been motivated to do so because Liang discloses that it would provide for increased connectivity, internetworking, and network management (col 2, lines 32-35). Note in the combination invention of Liu, Bouthillier, and Liang, both the secure exchange and the network selectors are used to determine if access should be granted to an information network and the information contained therein. As such, it is obvious to connect the secure exchange to the network selectors so that the secure exchange and network selectors may coordinate their security efforts by exchanging information.

Claim 2:

Liu does not explicitly disclose a premises concentrator, connected between the network selector and the secure exchange, for composing and decomposing the signals of the user terminals transferred by the network selector. However, it appears from the figure of a premises concentrator shown in Fig 5 of applicant's drawings that a premises concentrator is a device for connecting a terminal to a LAN segment. This reads on the ethernet service module disclosed by Liu (Fig 1, item 29 and p9, paragraphs 1-3). Note the ethernet service module disclosed by Liu disassembles and assembles network cells, which reads on composing and decomposing signals. Note that in Fig 1 of Bouthillier, data relay switch 26 also reads on a premises concentrator. The relay switch is connected between the network selectors and the network servers, which in Liu's modified invention would be found on separate networks and access to which are further protected by a secure exchange. Thus the limitation recited in claim 2 is obvious to the Liu's modified invention.

Claim 3:

Liu does not explicitly disclose a storey concentrator, connected between the premises concentrator and the secure exchange, for multiplexing and relaying the signals of the premises concentrators. However, it appears from the figure of a storey concentrator shown in Figure 4 of applicant's drawings that a storey concentrator is a type of switch. Switches are well known in the art of networking. Note Liu discloses an ATM switch in Fig 1, item 26, which connects the residence and business locations (items 21 and 22) to WAN 24. The concentrator disclosed by Liang is also partially

composed of switches (Fig 2, host module 241 and Fig 3, items 305-307). Switches multiplex, demultiplex, and relays signals. Recall also that in modifying Liu's invention with Liang's teachings that it was stated in claim 1 that ATM switch 26 seen in Fig 1 of Liu is replaced by a concentrator disclosed by Liang. Note that in doing this, the storey concentrator is connected between the premises concentrator (i.e. Ethernet service module as disclosed by Liu in Fig 1, item 29) and the secure exchange (i.e. the network manager module as disclosed by Liang in Fig 3, item 304). Thus the limitation recited in claim 3 is obvious Liu's modified invention.

Claim 4:

Liu discloses the user terminal is at least, one, two, or all of a computer, a telephone and a TV set (Fig 1, item 21); the information networks are interconnected public information networks or physically isolated dedicated networks, secure networks or jurisdiction networks, the public information networks include telephone networks, TV networks, data networks, IP network, and broadband IP networks (Fig 1 and p7, line31-p8, line 2).

Claim 5:

Liu does not explicitly disclose the network selector is provided with an RF, RJ 11 and/or RJ 45 port to connect with the user terminal; the network selector is connected to the secure exchange with an RJ 45 interface, the connection transfers said user parameters, requests and control information using one of the two undefined twisted pairs in the RJ 45 interface.

However, at the time applicant's invention was made, the RJ 45 interface and port were the most commonly used to connect networking equipments in high-speed networks. The limitations of the network selector is provided with an RJ 45 port to connect with the user terminal and the network selector is connected to the secure exchange with an RJ 45 interface is obvious to the Liu's modified invention because Ethernet cards all come with RJ 45 ports and both Liu and Liang discloses Ethernet networks (Liu: p9, last paragraph and Liang: col 6, lines 29-37). One of ordinary skill would have been motivated to use RJ 45 to connect networking equipment because the RJ 45 interface was pretty much the defacto standard to use to network equipments in high-speed networks (i.e. greater than dial-up speed) and was backwards compatible with RJ 11. As such the limitation of the connection transfers said user parameters, requests and control information using one of the two undefined twisted pairs in the RJ 45 interface is also obvious because RJ 45 by default uses one of two undefined twisted pairs to send and receive information. In the case of the Liu's modified invention, such information includes user parameters, requests and control information.

Claim 6:

Liu does not explicitly disclose the network selector is provide with an RF, RJ 11, and/or RJ 45 port, for connecting to the user terminal; the network selector and the premises concentrator are connected with an RJ 45 interface, the premises concentrator is connected in turn to the secure exchange with an RJ 45 port, the signals are transferred between the network selector, the premises concentrator and the secure exchange using one of the two undefined twisted pairs in the RJ 45 port.

However, as explained in claim 5, the RJ 45 interface and port were the most commonly used to connect networking equipments in high-speed networks. As such, the limitations of the network selector is provide with an RF, RJ 11, and/or RJ 45 port, for connecting to the user terminal and the network selector and the premises concentrator are connected with an RJ 45 interface, the premises concentrator is connected in turn to the secure exchange with an RJ 45 port is obvious to Liu's modified invention because Ethernet cards all come with RJ 45 ports and both Liu and Liang discloses Ethernet networks (Liu: p9, last paragraph and Liang: col 6, lines 29-37). The limitation of the signals are transferred between the network selector, the premises concentrator and the secure exchange using one of the two undefined twisted pairs in the RJ 45 port describes how signals would be transferred between the network selector, the premises concentrator and the secure exchange using an RJ 45 interface. One of ordinary skill would have been motivated to use RJ 45 to connect networking equipment because the RJ 45 interface was pretty much the defacto standard to use to network equipments in high-speed networks (i.e. greater than dial-up speed) and was backwards compatible with RJ 11.

Claim 7:

Liu does not explicitly disclose RJ 45 ports are provided on both the terminal side and the network side of the storey concentrator, the storey concentrator uses one of the two undefined twisted pairs in the RJ 45 port to transfer parameters and signals, the twisted pair causes the secure exchange to switch among the information networks with the variations of voltage.

However, as explained in claim 5, the RJ 45 interface and port were the most commonly used to connect networking equipments in high-speed networks. The limitation recited in claim 7 is obvious to Liu's modified invention because Ethernet cards all come with RJ 45 ports and both Liu and Liang discloses Ethernet networks (Liu: p9, last paragraph and Liang: col 6, lines 29-37). One of ordinary skill would have been motivated to use RJ 45 to connect networking equipment because the RJ 45 interface was pretty much the defacto standard to use to network equipments in high-speed networks (i.e. greater than dial-up speed) and was backwards compatible with RJ 11. The limitation of the storey concentrator uses one of two undefined twisted pair in the RJ 45 port to transfer parameters and signals describes who the storey concentrator must use the RJ 45 interface to transmit any information. The limitation of the twisted pair causes the secure exchange to switch among the information networks with the variations of voltage reads on the secure exchange allowing a terminal to connect to a network if it successfully passes the security parameters. One of ordinary skill would have been motivated to use RJ 45 to connect networking equipment because the RJ 45 interface was pretty much the defacto standard to use to network equipments in high-speed networks (i.e. greater than dial-up speed) and was backwards compatible with RJ 11

Claim 8:

Liu does not explicitly disclose the other one of the two undefined twisted pairs in said RJ 45 port is used to connect to the telephone networks. However, by nature, pins 4,5, 7, and 8 of an RJ 45 interface are reserved for telephone usage. Further, Liu

discloses connecting to a telephone network (p7, last paragraph). It was discussed in claim 5, why it would have been obvious to use RJ 45 in the Liu's modified invention. As such, the limitation recited in claim 8 is also obvious to Liu's modified invention because if RJ 45 is used to connect all the networking equipment, then to connect to the telephone networks as disclosed by Liu, the other one of the two undefined twisted pairs in the RJ 45 port must be used to connect to the telephone networks.

Claim 9:

Liu discloses said connecting lines use optical fibers, cable TV line or ADSL lines to transfer parameters and signals (p8, lines 3-21).

Claim 10:

Liu does not explicitly disclose the secure exchange is connected to an authentication server, the secure exchange uses the existing user parameters stored in the authentication server to determine the legality of the current user, the secure exchange is connected to the computer local area network and IP gateway corresponding to each of the information networks via the network side RJ 45 port, the TV network RF port or optical receiving and transmitting terminal, and connected to each one of the information networks via the wide area network interface of the computer local area network and the IP gateway.

However, the examiner asserts that authentication servers were well known at the time applicant's invention was made and they were used to authenticate a user, i.e. a user would enter their user id and/or password and the information would be sent to the authentication server, which would then verify if the user id and/or password is

correct before allowing access or information from the authentication server is sent to a device which would compare the information the user sent to the device with the information the authentication server sent to see if there is a match before allowing access. In light of this it would have been obvious to one of ordinary skill to further modify Liu's modified invention such that the secure exchange is connected to an authentication server, the secure exchange uses the existing user parameters stored in the authentication server to determine the legality of the current user. One of ordinary skill would have been motivated to do so as this would provide more security to Liu's modified invention.

The limitation of the secure exchange is connected to the computer local area network and IP gateway corresponding to each of the information networks via the network side RJ 45 port, the TV network RF port or optical receiving and transmitting terminal, and connected to each one of the information networks via the wide area network interface of the computer local area network and the IP gateway is obvious to Liu's modified invention. It was mentioned in claim 5 how it would have been obvious to use RJ 45 interfaces to connect the network equipments in Liu's modified invention. Thus the secure exchange must be connected to the computer local area network and IP gateway corresponding to each of the information networks via the network side RJ 45 port. Note Figure 1 of Liu. In Liu's modified invention, the secure exchange would be located where ATM switch 26 is currently located. Thus the secure exchange is connected to each one of the information networks via the wide area network interface of the computer local area network and the IP gateway. An IP gateway converts data in

the IP protocol and are well known. It is obvious that since WAN 24 disclosed by Liu contains different types of networks, IP gateways must exist and they are connected to the LAN's located in WAN 24 and the secure exchange.

Claim 11:

The limitation of the network selector is provided with an IC card drive, for reading out the user information stored in user identification card is obvious to Liu's modified invention. Bouthillier discloses the limitation (col 2, lines 32-39).

Claim 12:

Liu does not disclose the secure exchange is provided with a drive for reading IC cards to identify management identity of system manager, the secure exchange generates user identification cards based on the user information set on the secure exchange by the system manager.

However, Bouthillier discloses a drive for reading IC cards for identification purposes (col 2, lines 32-39). Further, the examiner notes that a user giving a system administrator identification information so that identification cards can be made for the user at a central authentication facility is well known in the art, i.e. such identification information could be biometric information. It is further well known that if an administrator uses an administration facility to add a user to a database so the user can be part of the network that the administrator has to authenticate himself/herself for security purposes.

In light of the above, it would have been obvious at the time applicant's invention was made for one of ordinary skill to further modify Liu's modified invention according to

the limitation recited in claim 12. One of ordinary skill would have been motivated to do so as it would provide for a way to add new users to a network identification system that is secure as well as providing the user with a token they can use to later log onto the system. Note that it would have been obvious to have the secure exchange create the user identification cards because the secure exchange will later, in Liu's modified invention, be involved in authenticating a user for network access, therefore by having the secure exchange both do the card making and authenticating, the user information does not have to be exported to yet another device or party, which would increase the likelihood the information might be intercepted and used for illegal access.

Claim 15:

Liu does not explicitly disclose the user terminal is diskless computer, and all the computer local area networks connected to the secure exchange are provided with a file server for operating with the diskless computer, the file server has the operating system and system data of each of the diskless computer and the operating data of each of the user stored therein. However, the examiner notes that dummy terminals connected to a mainframe was well known at the time applicant's invention was made and reads on the limitation recited in claim 15. It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to further modify Liu's invention according to the limitations recited in claim 15. One of ordinary skill would have been motivated to do so because mainframes are still in use today, though mainly for backup purposes. Incorporating Liu, Bouthillier, and Liang's teachings into a mainframe environment

would allow for connecting to one or more mainframe via a network connection in a secure manner.

Claim 16:

Liu does not explicitly disclose the user terminal is a computer with disk, when a user of the computer with disk having the right to use an information network accesses the information network, the network selector instructs the computer having disk to initiate itself from the information network in the operating manner of a diskless computer, and instructs the local hard disk of the computer with disk to stop operating. However, as mentioned in claim 15, mainframe computers are well known at the time applicant's invention was made. Booting off a network device was also well known at the time applicant's invention was made. Note that just because a computer has a local hard disk, there is no need to use it, i.e. the computer could be used as a dummy terminal if the computer was connected directly to the mainframe on boot like an ordinary dummy terminal. In light of this, it would have been obvious to one of ordinary skill in the art to further modify Liu's invention according to the limitations recited in claim 16. One of ordinary skill would have been motivated to do so as it would allow a user to securely connect to a mainframe computer over the network without having to get up from their desk to find a free dummy terminal. Note that in Liu's modified invention, the network selector sends a signal which enables computer usage and network device usage.

Claim 17:

Liu does not disclose the user terminal is a computer with a read only optical disk, the computer with read only optical disk reads out the operating system from local read only optical disk and initiates itself, but all the data it reads and writes are on the computer local area network to which it is connected. However, the examiner asserts that booting into an operating system via a CD-ROM is well known in the art, i.e. there are builds of Linux which allows one to operate off CD only without having to install the OS to hard disk and networking support are also included. In light of this, it would have been obvious to one of ordinary skill in the art to further modify Liu's invention according to the limitations recited in claim 17. One of ordinary skill would have been motivated to do so as it would allow one to program and save the source file without having to install an entire operating system. Note that many programming classes at a university level give students a Unix mainframe account so that they can compile and save their work on the mainframe computer. Because of this some students get into the habit of programming in a Linux/Unix environment while using Windows for everything else. Often it is easier to connect to the mainframe account from a Linux/Unix environment than a Windows environment. By booting to Linux via a CD and saving any source code to the mainframe computer, the student does not have to install two operating system on his/her computer, thus saving space on the hard drive.

Claim 18:

The limitation of the user terminal is a computer, the network selector is embedded in the computer, and the panel of the network selector is a constituent part of the panel of the computer or is combined with the optical disk drive or the floppy disk

drive is obvious to Liu's modified invention. Note Figure 1 of Bouthillier. Computer 18 has a card reader 14 which is a constituent part of the panel of the computer. The card reader is part of the network selector.

Claim 19:

The limitation of the user terminal is a telephone, the telephone switches among a plurality of telephone networks via the network selector and the secure exchange is obvious to Liu's modified invention. Note Figure 1 of Liu. In items 21 and 22, we see telephones connected to the network interface facility 28. Liu's modified invention is used to switch the terminal's connection, using the network selector and secure exchange, among different networks. In Fig 1 of Liu, item 24 is a WAN which includes telephone networks (p7, last paragraph).

Claim 20:

The limitation of the user terminal is a TV set, the TV set switches among a plurality of TV networks via the network selector and the secure exchange is obvious to Liu's modified invention. Note Figure 1 of Liu. In item 21, we see what appears to be TV's connected to the network interface facility 28. Thus because Liu's modified invention is used to switch the terminal's connection among different networks via the network selector and the secure exchange, there must be TV networks for the TV sets seen in Fig 1 of Liu to connect to.

Claim 21:

As per claim 21, Liu discloses the user terminal is a computer (see Fig 1, items 21 and 22 contains what appears to be computers connected to the network facility 28).

Liu does not explicitly disclose when the user changes the selection of an information network from the network selector to which the computer is connected, the computer should be re-initiated with the memory therein being refreshed, and reconnected to the information network newly selected. However, the limitation as recited is standard procedure when disconnecting from one network and connecting to another. It would have been obvious to further modify Liu's invention such that when the user changes the selection of an information network from the network selector to which the computer is connected, the computer should be re-initiated with the memory therein being refreshed, and reconnected to the information network newly selected. One of ordinary skill would have been motivated to do so because it would free memory no longer used, improving computer and network performance.

Claim 23:

Liu discloses remote a network with what appears to be information networks (Fig 1, items 24, 42, and 44). Liu also discloses a secure exchange (Fig 1). Liu does not specifically disclose:

(1) A network selector receives and transfers user parameters and user requests for selectively connecting to a particular information network, and controls the user terminal.

(2) A secure exchange connects to the particular information network in response to the request of the user form the network selector, and determines the legality of the user's request based on the user parameters.

(3) The secure exchange accepts or rejects the user's request for connecting to a particular information network based on the result of determination.

However, Bouthillier discloses a network selector receives and transfers user parameters and user requests for selectively connecting to a particular network server, and controls the user terminal (Fig 1 and col 1, line 51-col 2, line 12). At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art combine Liu and Bouthillier's teachings so that the network servers disclosed by Bouthillier are located on a particular information network, i.e. separately from the terminal. One of ordinary skill would have been motivated to do so for the same reasons given in claim 1.

Liang discloses a secure exchange determines the legality of the user parameters and requests from the network selectors, and accepts or rejects to access the particular information network requested by the user based on the result of the determination (Fig 2 and col 7, lines 1-23).

In light of the above, at the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to incorporate Liang's teachings into the combination invention of Liu and Bouthillier according to the limitations recited in claim 23, i.e. replace ATM switch 26 seen in Fig 1 of Liu with a concentrator disclosed by Liang. One of ordinary skill would have been motivated to do so because Liang discloses that it would provide for increased connectivity, internetworking, and network management (col 2, lines 32-35). Note in the combination invention of Liu, Bouthillier,

and Liang, the user initiates a request to connect to a particular information network via the network selector, so the secure exchange connects to the particular information network in response to the request of the user from the network selector.

Claim 24:

Liu does not disclose:

a. The network selector reads the user's identification card and encryption key to obtain the user's identity and determines the type of the user terminal device, and generates user parameters including the user identity, the right to use the security level of a secure network, jurisdiction network or dedicated network, and the type of the user terminal.
b. The network selector receives the user's request of selecting an information network, including the number and link path of the information network selected by the user.
c. The network selector transfers the user parameters and the user's request to the secure exchange.

However, smart cards used for identification purposes are well known in the art as well as smart cards with encryption keys located on them. It is also well known to give different types of encryption keys to different users wherein each type of key gives different levels of access to a system. For example, in a cable TV systems, smart cards with different keys allow a set top box to be able to descramble different levels of cable subscriptions, i.e. basic cable, premium channels, and premium channels with a specific

movie channel. In light of this, it would have been obvious to one of ordinary skill in the art to further modify Liu's invention to include limitation a above. One of ordinary skill would have been motivated to do so as it would provide for better security.

Note that in Liu's modified invention, to be able to connect to a specific information network, the network selector must receive the user's request of selecting an information network, including the number and link path of the information network selected by the user or the network selector would not know which network to enable connection to. Further the network selector must transfer the user parameters and the user's request to the secure exchange because the secure exchange will need the information to authenticate the user to see if the user has proper rights to access the network.

Claim 25:

Liu dose not explicitly disclose:

d. Determining whether the user accesses a secure network, jurisdiction network, or dedicated network.

e. If the user accesses the secure network, jurisdiction network, or dedicated network, further determining whether the user has the right to use this information network.

However, the above limitations are obvious to Liu's modified invention. Note that Bouthillier discloses two types of network servers in Fig 1, a secure server (item 32) and an unsecured server (item 30). Bouthillier also disclose having to insert an

authorization card to be able to access the secure server (col 2, lines 2-13). If the Liu's modified invention did not determine if a user accesses a secure network and does not check the user's rights to see if the user is authorized to use the network then there would be no point in having to authorize via the authorization card before allowing a user to access a secure server (i.e. on a secure network) as the network would not be secure anyway.

Claim 26:

Liu does not disclose connecting the user to the public information network, if the user does not access the secure network, jurisdiction network, or dedicated network. However, note Fig 1 of Bouthillier. Switch 24 is set such that it allows access to either the unsecured network server 30 or secure network server 32. If the switch is not set to the secure network server 30, then by default it is set to the unsecured network server. This reads on connecting the user to the public information network, if the user does not access the secure network, jurisdiction network, or dedicated network in the context of Liu's modified invention.

Further, Bouthillier discloses having to insert an authorization card to be able to access the secure server, this reads on the limitation of rejecting to connect to the information network, if the user is of no right to use the secure network, jurisdiction network, or dedicated network.

Liu, Bouthillier, and Liang do not specifically disclose connecting to the information network requested by the user, if the user is of the right to use the secure network jurisdiction network or dedicated network and the user terminal used by the

user is not provided with hard disk or memory for storing information; the secure exchange and network selector connecting to the information network for the user under the conditions that the user has stopped the operation of the hard disk and refreshing of the memory, if the user is of the right to use the secure network, jurisdiction network, or dedicated network but the user terminal is provided with a hard disk or memory for storing information.

However, mainframe computers and connecting to them via a dummy terminal or a computer acting as a dummy terminal was well known at the time applicant's invention was made. The above limitations read on logging into a mainframe computer and using the functions of the mainframe computer via a dummy terminal or a PC acting as a dummy terminal. Note that if it was a PC acting as a dummy terminal, the operations of the hard disk and refreshing of the memory must be stopped for proper operation of the PC as a dummy terminal. At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to further modify Liu's invention to include the limitations of connecting to the information network requested by the user, if the user is of the right to use the secure network jurisdiction network or dedicated network and the user terminal used by the user is not provided with hard disk or memory for storing information; the secure exchange and network selector connecting to the information network for the user under the conditions that the user has stopped the operation of the hard disk and refreshing of the memory, if the user is of the right to use the secure network, jurisdiction network, or dedicated network but the user terminal is provided with a hard disk or memory for storing information. One of ordinary skill would

have been motivated to do so as the teachings of Liu, Bouthillier, and Liang would provide a secure way to connect to a mainframe network.

Claim 27:

Claim 27 recites a limitation similar to what is recited in claim 2 and is rejected for the same reasons.

Claim 28:

Claim 28 recites a limitation substantially similar to what is recited in claim 3 and is rejected for the same reasons. Note there are slight differences in wordings, but the meaning of the limitations are similar.

Claim 29:

Liu does not explicitly disclose all the connections between the network selectors, premises concentrator, storey concentrator and secure exchange use one of the two undefined twisted pairs in an RJ45 port to transfer signals.

However, at the time applicant's invention was made, the RJ 45 interface and port were the most commonly used to connect networking equipments in high-speed networks. The above limitation is obvious to the Liu's modified invention because Ethernet cards all come with RJ 45 ports and both Liu and Liang discloses Ethernet networks (Liu: p9, last paragraph and Liang: col 6, lines 29-37). It would have been obvious to one of ordinary skill to further modify Liu's invention according to the limitation recited in claim 29 because RJ 45 is the defacto standard in connecting networking equipments in high-speed networks.

Claim 30:

Claim 30 recites a limitation substantially similar to what is recited in claim 13 and is rejected for the same reasons.

Claim 33:

Claim 33 recites a limitation substantially similar to what is recited in claim 4 and is rejected for the same reasons.

Claim 34:

Claim 34 recites a limitation substantially similar to what is recited in claim 19 and is rejected for the same reasons.

Claim 35:

Claim 35 recites a limitation substantially similar to what is recited in claim 20 and is rejected for the same reasons.

Claims 13-14 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (WO 98/47310) in view of Bouthillier et al (US 5,894,552) further in view of Liang (US 5,537,099) and further in view of Bianco et al (US 6,256,737)

Claim 13:

Liu does not disclose the user parameters transferred to the secure exchange via the network selector and authenticated by the secure exchange include the fingerprint of the user. However, the examiner notes that authentication via the use of biometric information such as fingerprints, DNA, facial images were well known at the time applicant's invention was made. Bianco also discloses this (abstract). In light of this it

would have been obvious to further modify Liu's invention such that the user parameters transferred to the secure exchange via the network selector and authenticated by the secure exchange include the fingerprint of the user. One of ordinary skill would have been motivated to do so because biometric authentication, such as fingerprint authentication, are among the most secure authentication techniques.

Claim 14:

Liu does not disclose the user parameters transferred to the secure exchange via the network selector and authenticated by the secure exchange include the face image information of the user. However, the examiner notes that authentication via the use of biometric information such as fingerprints, DNA, facial images were well known at the time applicant's invention was made. Bianco also discloses this (abstract). In light of this it would have been obvious to further modify Liu's invention such that the user parameters transferred to the secure exchange via the network selector and authenticated by the secure exchange include the face image information of the user. One of ordinary skill would have been motivated to do so because biometric authentication, such as facial recognition, are among the most secure authentication techniques.

Claim 31:

Claim 31 recites a limitation substantially similar to what is recited in claim 13 and is rejected for the same reasons.

Claim 32:

Claim 32 recites a limitation substantially similar to what is recited in claim 14 and is rejected for the same reasons.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (WO 98/47310) in view of Bouthillier et al (US 5,894,552).

Claim 22:

Liu discloses at least two information networks and a user terminal (Fig 1). Liu does not specifically disclose a network selector, connected between the user terminal and the information network, for receiving and transferring user parameters and request for connecting to a particular information network, and for controlling the user terminal.

However, Bouthillier discloses network selectors, connected between the user terminal and the information network, for receiving and transferring user parameters and request for connecting to a particular information network, and for controlling the user terminal (Fig 1 and col 1, line 51-col 2, line 12).

At the time applicant's invention was made it would have been obvious to one of ordinary skill to modify Liu's invention using Bouthillier's teachings according to the limitations recited in claim 22. One of ordinary skill would have been motivated to do so for the reasons given in claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponnoreay Pich whose telephone number is 571-272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Ponnoreay Pich
Examiner
Art Unit 2135

Primary Examiner
Art Unit 2135

PP